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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/370,770	08/09/1999	JUSTIN CHE-I CHUANG	2685/5259	8481

26652 7590 01/14/2003

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 01/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/370,770

Applicant(s)

CHUANG ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-12 and 16-18 is/are allowed.
- 6) ☒ Claim(s) 13-15 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 10/28/02. Fig. 8 is objected to because step 830 and the branches from step 830 to steps 840 and 850 do not correspond with the description of Fig. 8 on page 12 of the specification, which states that if the signal quality value is less than the *no-transmission* threshold, ('yes' branch), the receiver ceases transmission (*step 840*), otherwise ('no' branch), link adaptation is performed (*step 850*).

Response to Arguments

2. Applicant's arguments filed 10/28/02 with respect to claims 13-15 have been fully considered but they are not persuasive.

Regarding claim 13, Applicant argues that Marchetto does not describe or suggest the calculation of threshold values, calculating a performance criteria using at least one parameter, and determining a range of signal quality values for which the performance criteria function is maximized. These arguments are addressed in the rejection of claim 13 stated below.

Applicant's arguments regarding claims 14 and 15 are also addressed in the rejection below.

Claim Objections

3. Claims 2, 3 and 19 are objected to because of the following informalities:
4. Claim 2, line 3, the Examiner suggests that "each retransmission mode" be changed to --each link adaptation mode--.
5. In the last line of claim 19, "is signal" should be --in signal--.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Marchetto et al. U.S. Patent 5,914,959.

8. Regarding claim 13, Marchetto et al. teach a digital communications system having an automatically selectable transmission rate in a retransmission environment comprising a receiver that stores a look-up table (LUT) listing the acceptable N (threshold) values for each available constellation bit rate (i.e. link adaptation mode). Thus, the LUT associates each link adaptation mode with the maximum number of errors (N) that may be tolerated for that mode. One of ordinary skill in the art would recognize that for each mode, knowledge of the performance of the channel relative to a varying communication parameter must be obtained in order to determine the mode's threshold (i.e. maximum number of errors tolerable). For example, Parantainen et al., International Publication WO 98/31177, describe that the determination of an interference threshold is related to a signal quality value by means of some mathematical relationship (see p. 5 lines 26-29), said mathematical relationship considered to define a performance criteria function. Therefore, it is inherent that the threshold values stored in the LUT are calculated based on a performance criteria function using at least one parameter. Further, Marchetto et al. state that the best mode, or maximum performance, relates to the

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highest constellation pattern rate acceptable (see col. 5 line 62 to col. 6 line 8), and since the LUT defines the maximum number of errors that are acceptable for each link adaptation mode, an implied range from the number N for one adaptation mode (i.e. QPSK) to the number N for the next lower adaptation mode (i.e. BPSK) defines the range of signal quality values for which the performance criteria is maximized for said one adaptation mode (i.e. QPSK).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchetto et al. in view of Parantainen et al., International Publication WO 98/31177.

11. Regarding claims 14 and 15, Marchetto et al. disclose a digital communications system having an automatically selectable transmission rate, as discussed above, but fail to expressly disclose that the performance criteria function is a throughput function dependent upon at least one of a radio interference rate value and a block error rate value, and that the signal quality value is one of a SIR and a BLER.

12. Parantainen et al. disclose that the quality value of a radio communications system is related to an interference threshold through a mathematical relationship (see p. 5 lines 26-29), said mathematical relationship considered to define a throughput function, and further disclose that the signal quality indicator may be an average number of defective bits per transmitted information packet (i.e. block) or some other known indicator (see p. 6 lines 1-8).

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13. Therefore, the limitations where the performance criteria function is dependent upon at least one of a radio interference rate value and a block error rate value and where the signal quality value is one of a SIR and a BLER is considered a design consideration that fails to patentably distinguish over Marchetto et al in view of Parantainen et al as various known indicators may be used as an indicator of the signal quality.

Allowable Subject Matter

14. Claims 1, 4-12 and 16-18 are allowable over the prior art of record.

15. Claims 2, 3 and 19 would be allowable if rewritten to overcome the objections set forth in this Office action.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

David B. Lugo
Patent Examiner

1/8/03


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600